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## RAW SEQUENCE LISTING

DATE: 01/31/2002

PATENT APPLICATION: US/10/033,026

TIME: 10:29:08

Input Set : N:\Crf3\RULE60\10033026.txt

Output Set: N:\CRF3\01312002\J033026.raw

3 <110> APPLICANT: Lipscombe, Diane  
4 Schorge, Stephanie  
6 <120> TITLE OF INVENTION: HUMAN N-TYPE CALCIUM CHANNEL ISOFORM AND USES THEREOF  
8 <130> FILE REFERENCE: B1055/7000  
10 <140> CURRENT APPLICATION NUMBER: 10/033,026  
11 <141> CURRENT FILING DATE: 2001-12-28  
13 <150> PRIOR APPLICATION NUMBER: US 09/268,163  
14 <151> PRIOR FILING DATE: 1999-03-12  
16 <150> PRIOR APPLICATION NUMBER: US 60/077,901  
17 <151> PRIOR FILING DATE: 1998-03-13  
19 <160> NUMBER OF SEQ ID NOS: 28  
21 <170> SOFTWARE: FastSEQ for Windows Version 3.0  
23 <210> SEQ ID NO: 1  
24 <211> LENGTH: 12  
25 <212> TYPE: DNA  
26 <213> ORGANISM: Homo sapiens  
28 <400> SEQUENCE: 1  
29 gagcttcgtg gg  
31 <210> SEQ ID NO: 2  
32 <211> LENGTH: 4  
33 <212> TYPE: PRT  
34 <213> ORGANISM: Homo sapiens  
36 <400> SEQUENCE: 2  
37 Ser Phe Val Gly  
38 1  
40 <210> SEQ ID NO: 3  
41 <211> LENGTH: 7376  
42 <212> TYPE: DNA  
43 <213> ORGANISM: Homo sapiens  
45 <220> FEATURE:  
46 <221> NAME/KEY: CDS  
47 <222> LOCATION: 146..7174  
49 <400> SEQUENCE: 3  
50 gcggcgccggt ctgcggcggt ggggccgggc gaggtccgct gcgggtcccgg cggtcccggt 60  
51 gctgctccgc tctgagcgcc tggcgcgccc cgcgccctcc ctgccggggc cgctggggccg 120  
52 gggatgcacg cggggcccg gagcc atg gtc cgc ttc ggg gac gag ctg ggc 172  
53 Met Val Arg Phe Gly Asp Glu Leu Gly  
54 1 5  
55 ggc cgc tat gga ggc ccc ggc ggc gga gag cgg gcc cgg ggc ggc ggc 220  
56 Gly Arg Tyr Gly Gly Pro Gly Gly Gly Glu Arg Ala Arg Gly Gly Gly  
57 10 15 20 25  
58 gcc ggc ggg gcg ggg ggc ccg ggt ccc ggg ggg ctg cag ccc ggc cag 268  
59 Ala Gly Gly Ala Gly Gly Pro Gly Pro Gly Gly Leu Gln Pro Gly Gln

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	30	35	40	
61	cgg gtc ctc tac aag caa tcg atc gcg cag cgc gcg cgg acc atg gcg			316
62	Arg Val Leu Tyr Lys Gln Ser Ile Ala Gln Arg Ala Arg Thr Met Ala			
63	45	50	55	
64	ctg tac aac ccc atc ccg gtc aag cag aac tgc ttc acc gtc aac cgc			364
65	Leu Tyr Asn Pro Ile Pro Val Lys Gln Asn Cys Phe Thr Val Asn Arg			
66	60	65	70	
67	tcg ctc ttc gtc ttc agc gag gac aac gtc gtc cgc aaa tac gcg aag			412
68	Ser Leu Phe Val Phe Ser Glu Asp Asn Val Val Arg Lys Tyr Ala Lys			
69	75	80	85	
70	cgc atc acc gag tgg cct cca ttc gag tat atg atc ctg gcc acc atc			460
71	Arg Ile Thr Glu Trp Pro Pro Phe Glu Tyr Met Ile Leu Ala Thr Ile			
72	90	95	100	105
73	atc gcc aac tgc atc gtg ctg gcc ctg gag cag cac ctc cct gat ggg			508
74	Ile Ala Asn Cys Ile Val Leu Ala Leu Glu Gln His Leu Pro Asp Gly			
75	110	115	120	
76	gac aaa acg ccc atg tcc gag cgg ctg gac gac acg gag ccc tat ttc			556
77	Asp Lys Thr Pro Met Ser Glu Arg Leu Asp Asp Thr Glu Pro Tyr Phe			
78	125	130	135	
79	atc ggg atc ttt tgc ttc gag gca ggg atc aaa atc atc gct ctg ggc			604
80	Ile Gly Ile Phe Cys Phe Glu Ala Gly Ile Lys Ile Ile Ala Leu Gly			
81	140	145	150	
82	ttt gtc ttc cac aag ggc tct tac ctg cgg aac ggc tgg aac gtc atg			652
83	Phe Val Phe His Lys Gly Ser Tyr Leu Arg Asn Gly Trp Asn Val Met			
84	155	160	165	
85	gac ttc gtg gtc gtc ctc aca ggg atc ctt gcc acg gct gga act gac			700
86	Asp Phe Val Val Val Leu Thr Gly Ile Leu Ala Thr Ala Gly Thr Asp			
87	170	175	180	185
88	ttc gac ctg cga aca ctg agg gct gtg cgt gtg ctg agg ccc ctg aag			748
89	Phe Asp Leu Arg Thr Leu Arg Ala Val Arg Val Leu Arg Pro Leu Lys			
90	190	195	200	
91	ctg gtg tct ggg att cca agt ttg cag gtg gtg ctc aag tcc atc atg			796
92	Leu Val Ser Gly Ile Pro Ser Leu Gln Val Val Leu Lys Ser Ile Met			
93	205	210	215	
94	aag gcc atg gtt cca ctc ctg cag att ggg ctg ctt ctc ttc ttt gcc			844
95	Lys Ala Met Val Pro Leu Leu Gln Ile Gly Leu Leu Leu Phe Phe Ala			
96	220	225	230	
97	atc ctc atg ttt gcc atc att ggc ctg gag ttc tac atg ggc aag ttc			892
98	Ile Leu Met Phe Ala Ile Ile Gly Leu Glu Phe Tyr Met Gly Lys Phe			
99	235	240	245	
100	cac aag gcc tgt ttc ccc aac agc aca gat gcg gag ccc gtg ggt gac			940
101	His Lys Ala Cys Phe Pro Asn Ser Thr Asp Ala Glu Pro Val Gly Asp			
102	250	255	260	265
103	ttc ccc tgt ggc aag gag gcc cca gcc cgg ctg tgc gag ggc gac act			988
104	Phe Pro Cys Gly Lys Glu Ala Pro Ala Arg Leu Cys Glu Gly Asp Thr			
105	270	275	280	
106	gag tgc cgg gag tac tgg cca gga ccc aac ttt ggc atc acc aac ttt			1036
107	Glu Cys Arg Glu Tyr Trp Pro Gly Pro Asn Phe Gly Ile Thr Asn Phe			
108	285	290	295	

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109	gac aat atc ctg ttt gcc atc ttg acg gtg ttc cag tgc atc acc atg	1084
110	Asp Asn Ile Leu Phe Ala Ile Leu Thr Val Phe Gln Cys Ile Thr Met	
111	300 305 310	
112	gag ggc tgg act gac atc ctc tat aat aca aac gat gcg gcc ggc aac	1132
113	Glu Gly Trp Thr Asp Ile Leu Tyr Asn Thr Asn Asp Ala Ala Gly Asn	
114	315 320 325	
115	acc tgg aac tgg ctc tac ttc atc cct ctc atc atc atc ggc tcc ttc	1180
116	Thr Trp Asn Trp Leu Tyr Phe Ile Pro Leu Ile Ile Ile Gly Ser Phe	
117	330 335 340 345	
118	ttc atg ctc aac ctg gtg ctg ggc gtg ctc tcg ggg gag ttt gcc aag	1228
119	Phe Met Leu Asn Leu Val Leu Gly Val Leu Ser Gly Glu Phe Ala Lys	
120	350 355 360	
121	gag cga gag agg gtg gag aac cgc cgc gcc ttc ctg aag ctg cgc cgg	1276
122	Glu Arg Glu Arg Val Glu Asn Arg Arg Ala Phe Leu Lys Leu Arg Arg	
123	365 370 375	
124	cag cag cag atc gag cga gag ctc aac ggg tac ctg gag tgg atc ttc	1324
125	Gln Gln Gln Ile Glu Arg Glu Leu Asn Gly Tyr Leu Glu Trp Ile Phe	
126	380 385 390	
127	aag gcg gag gaa gtc atg ctg gcc gag gag gac agg aat gca gag gag	1372
128	Lys Ala Glu Glu Val Met Leu Ala Glu Glu Asp Arg Asn Ala Glu Glu	
129	395 400 405	
130	aag tcc cct ttg gac gtg ctg aag aga gcg gcc acc aag aag agc aga	1420
131	Lys Ser Pro Leu Asp Val Leu Lys Arg Ala Ala Thr Lys Lys Ser Arg	
132	410 415 420 425	
133	aat gac ctg atc cac gca gag gag gga gag gac cgg ttt gca gat ctc	1468
134	Asn Asp Leu Ile His Ala Glu Glu Gly Glu Asp Arg Phe Ala Asp Leu	
135	430 435 440	
136	tgt gct gtt gga tcc ccc ttc gcc cgc gcc agc ctc aag agc ggg aag	1516
137	Cys Ala Val Gly Ser Pro Phe Ala Arg Ala Ser Leu Lys Ser Gly Lys	
138	445 450 455	
139	aca gag agc tcg tca tac ttc cgg agg aag gag aag atg ttc cgg ttt	1564
140	Thr Glu Ser Ser Ser Tyr Phe Arg Arg Lys Glu Lys Met Phe Arg Phe	
141	460 465 470	
142	ttt atc cgg cgc atg gtg aag gct cag agc ttc tac tgg gtg gtg ctg	1612
143	Phe Ile Arg Arg Met Val Lys Ala Gln Ser Phe Tyr Trp Val Val Leu	
144	475 480 485	
145	tgc gtg gtg gcc ctg aac aca ctg tgt gtg gcc atg gtg cat tac aac	1660
146	Cys Val Val Ala Leu Asn Thr Leu Cys Val Ala Met Val His Tyr Asn	
147	490 495 500 505	
148	cag ccg cgg cgg ctt acc acg acc ctg tat ttt gca gag ttt gtt ttc	1708
149	Gln Pro Arg Arg Leu Thr Thr Thr Leu Tyr Phe Ala Glu Phe Val Phe	
150	510 515 520	
151	ctg ggt ctc ttc ctc aca gag atg tcc ctg aag atg tat ggc ctg ggg	1756
152	Leu Gly Leu Phe Leu Thr Glu Met Ser Leu Lys Met Tyr Gly Leu Gly	
153	525 530 535	
154	ccc aga agc tac ttc cgg tcc tcc ttc aac tgc ttc gac ttt ggg gtc	1804
155	Pro Arg Ser Tyr Phe Arg Ser Ser Phe Asn Cys Phe Asp Phe Gly Val	
156	540 545 550	
157	atc gtg ggg agc gtc ttt gaa gtg gtc tgg gcg gcc atc aag ccg gga	1852

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158	Ile	Val	Gly	Ser	Val	Phe	Glu	Val	Val	Trp	Ala	Ala	Ile	Lys	Pro	Gly	
159		555					560					565					
160	agc	tcc	ttt	ggg	atc	agt	gtg	ctg	cgg	gcc	ctc	cgc	ctg	ctg	agg	atc	1900
161	Ser	Ser	Phe	Gly	Ile	Ser	Val	Leu	Arg	Ala	Leu	Arg	Leu	Leu	Arg	Ile	
162	570					575					580					585	
163	ttc	aaa	gtc	acg	aag	tac	tgg	agc	tcc	ctg	cgg	aac	ctg	gtg	gtg	tcc	1948
164	Phe	Lys	Val	Thr	Lys	Tyr	Trp	Ser	Ser	Leu	Arg	Asn	Leu	Val	Val	Ser	
165					590					595					600		
166	ctg	ctg	aac	tcc	atg	aag	tcc	atc	atc	agc	ctg	ctc	ttc	ttg	ctc	ttc	1996
167	Leu	Leu	Asn	Ser	Met	Lys	Ser	Ile	Ile	Ser	Leu	Leu	Phe	Leu	Leu	Phe	
168				605					610					615			
169	ctg	ttc	att	gtg	gtc	ttc	gcc	ctg	ctg	ggg	atg	cag	ctg	ttt	ggg	gga	2044
170	Leu	Phe	Ile	Val	Val	Phe	Ala	Leu	Leu	Gly	Met	Gln	Leu	Phe	Gly	Gly	
171			620					625					630				
172	cag	ttc	aac	ttc	cag	gat	gag	act	ccc	aca	acc	aac	ttc	gac	acc	ttc	2092
173	Gln	Phe	Asn	Phe	Gln	Asp	Glu	Thr	Pro	Thr	Thr	Asn	Phe	Asp	Thr	Phe	
174		635					640					645					
175	cct	gcc	gcc	atc	ctc	act	gtc	ttc	cag	atc	ctg	acg	gga	gag	gac	tgg	2140
176	Pro	Ala	Ala	Ile	Leu	Thr	Val	Phe	Gln	Ile	Leu	Thr	Gly	Glu	Asp	Trp	
177	650					655					660					665	
178	aat	gca	gtg	atg	tat	cac	ggg	atc	gaa	tcg	caa	ggc	ggc	gtc	agc	aaa	2188
179	Asn	Ala	Val	Met	Tyr	His	Gly	Ile	Glu	Ser	Gln	Gly	Gly	Val	Ser	Lys	
180				670					675					680			
181	ggc	atg	ttc	tcg	tcc	ttt	tac	ttc	att	gtc	ctg	aca	ctg	ttc	gga	aac	2236
182	Gly	Met	Phe	Ser	Ser	Phe	Tyr	Phe	Ile	Val	Leu	Thr	Leu	Phe	Gly	Asn	
183			685						690					695			
184	tac	act	ctg	ctg	aat	gtc	ttt	ctg	gcc	atc	gct	gtg	gac	aac	ctg	gcc	2284
185	Tyr	Thr	Leu	Leu	Asn	Val	Phe	Leu	Ala	Ile	Ala	Val	Asp	Asn	Leu	Ala	
186			700						705					710			
187	aac	gcc	caa	gag	ctg	acc	aag	gat	gaa	gag	gag	atg	gaa	gaa	gca	gcc	2332
188	Asn	Ala	Gln	Glu	Leu	Thr	Lys	Asp	Glu	Glu	Glu	Met	Glu	Glu	Ala	Ala	
189		715					720					725					
190	aat	cag	aag	ctt	gct	ctg	caa	aag	gcc	aaa	gaa	gtg	gct	gaa	gtc	agc	2380
191	Asn	Gln	Lys	Leu	Ala	Leu	Gln	Lys	Ala	Lys	Glu	Val	Ala	Glu	Val	Ser	
192	730					735					740					745	
193	ccc	atg	tct	gcc	gcg	aac	atc	tcc	atc	gcc	gcc	agg	cag	cag	aac	tcg	2428
194	Pro	Met	Ser	Ala	Ala	Asn	Ile	Ser	Ile	Ala	Ala	Arg	Gln	Gln	Asn	Ser	
195				750						755					760		
196	gcc	aag	gcg	cgc	tcg	gtg	tgg	gag	cag	cgg	gcc	agc	cag	cta	cgg	ctg	2476
197	Ala	Lys	Ala	Arg	Ser	Val	Trp	Glu	Gln	Arg	Ala	Ser	Gln	Leu	Arg	Leu	
198			765						770					775			
199	cag	aac	ctg	cgg	gcc	agc	tgc	gag	gcg	ctg	tac	agc	gag	atg	gac	ccc	2524
200	Gln	Asn	Leu	Arg	Ala	Ser	Cys	Glu	Ala	Leu	Tyr	Ser	Glu	Met	Asp	Pro	
201		780							785					790			
202	gag	gag	cgg	ctg	cgc	ttc	gcc	act	acg	cgc	cac	ctg	cgg	ccc	gac	atg	2572
203	Glu	Glu	Arg	Leu	Arg	Phe	Ala	Thr	Thr	Arg	His	Leu	Arg	Pro	Asp	Met	
204		795					800					805					
205	aag	acg	cac	ctg	gac	cgg	ccg	ctg	gtg	gtg	gag	ctg	ggc	cgc	gac	ggc	2620
206	Lys	Thr	His	Leu	Asp	Arg	Pro	Leu	Val	Val	Glu	Leu	Gly	Arg	Asp	Gly	

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207	810		815		820		825	
208	gcg	cgg	ggg	ccc	gtg	gga	ggc	aaa
209	Ala	Arg	Gly	Pro	Val	Gly	Gly	Lys
210					830		835	
211	ccc	gag	ggc	gtc	gac	cct	ccg	cgc
212	Pro	Glu	Gly	Val	Asp	Pro	Pro	Arg
213					845		850	
214	gac	aag	acc	ccc	gcg	gcg	ggg	gac
215	Asp	Lys	Thr	Pro	Ala	Ala	Gly	Asp
216					860		865	
217	gcg	gag	agc	ggg	gag	ccc	ggt	gcc
218	Ala	Glu	Ser	Gly	Glu	Pro	Gly	Ala
219					875		880	
220	cgc	agc	cac	agc	aag	gag	gcc	gcg
221	Arg	Ser	His	Ser	Lys	Glu	Ala	Ala
222						895		900
223	cgc	ggc	cga	ggc	cca	ggc	ccc	gag
224	Arg	Gly	Arg	Gly	Pro	Gly	Pro	Glu
225					910		915	
226	ggc	tcc	ccg	gag	gag	gcg	gcc	gag
227	Gly	Ser	Pro	Glu	Ala	Ala	Glu	Arg
228					925		930	
229	cac	cgg	cac	cag	gat	ccg	agc	aag
230	His	Arg	His	Gln	Asp	Pro	Ser	Lys
231						940		945
232	cgg	cgc	gcg	cgg	cac	cgc	ggc	ggc
233	Arg	Arg	Ala	Arg	His	Arg	Gly	Gly
234						955		960
235	gag	agc	ggg	gag	gag	ccg	gcg	cgg
236	Glu	Ser	Gly	Glu	Glu	Pro	Ala	Arg
237						970		975
238	cag	cct	gct	cac	gag	gct	gtg	gag
239	Gln	Pro	Ala	His	Glu	Ala	Val	Glu
240						990		995
241	acg	gag	aag	gag	gct	gag	ata	gtg
242	Thr	Glu	Lys	Glu	Ala	Glu	Ile	Val
243					1005		1010	
244	cgg	aac	cac	cag	ccc	cgg	gag	cca
245	Arg	Asn	His	Gln	Pro	Arg	Glu	Pro
246					1020		1025	
247	act	gtg	act	gtg	ggt	ccc	atg	cac
248	Thr	Val	Thr	Val	Gly	Pro	Met	His
249					1035		1040	
250	aag	gtg	gag	gaa	cag	cca	gag	gat
251	Lys	Val	Glu	Glu	Gln	Pro	Glu	Asp
252	1050					1055		1060
253	cgc	atg	ggc	agt	cag	ccc	cca	gac
254	Arg	Met	Gly	Ser	Gln	Pro	Pro	Asp
255					1070		1075	

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